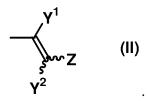
## a.) Amendment to the Claims

Claim 1 (Cancelled).

- 3. (Currently Amended) The composition according to the claim 1 or 2, method according to claim 2 or 9, wherein R<sup>4</sup> is represented by formula (II):



- 4. (Currently Amended) The composition  $\underline{\text{method}}$  according to claim 3, wherein  $Y^1$  and  $Y^2$  are both hydrogen atoms.
- 5. (Currently Amended) The eomposition method according to claim 3, wherein Z is substituted or unsubstituted aryl or a group represented by formula (III):

$$- \bigvee_{\mathsf{R}^6} \mathsf{O}_{\mathsf{CH}_2)_{\mathsf{m}}}$$
 (III)

(wherein R<sup>6</sup> represents a hydrogen atom, hydroxy, lower alkyl, lower alkoxy, halogen, nitro or amino; and m represents an integer of 1 to 3).

Claims 6-8 (Cancelled).

9. (Currently Amended) The method according to any one of claims 6 to 8, wherein the higher brain dysfunction is A method for preventing and/or treating an impairment of higher brain function selected from the group consisting of memory, thinking, recognition, action and learning, comprising administering to a patient in need thereof an effective amount of a xanthine derivative represented by formula (I)

$$\begin{array}{c|c}
X^2 & R^3 \\
R^1 & N & N \\
X^1 & N & N
\end{array}$$

$$\begin{array}{c}
X^2 & R^3 \\
N & N & N
\end{array}$$

$$\begin{array}{c}
R^4 & (I) \\
R^2 & N
\end{array}$$

wherein

 $R^1$ ,  $R^2$  and  $R^3$  independently represent a hydrogen atom, lower alkyl, lower alkenyl, or lower alkynyl;

 $R^4$  represents cycloalkyl,  $-(CH_2)_n-R^5$  (wherein  $R^5$  represents a substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group; and n represents an integer of 0 to 4) or a group represented by formula (II):

$$Y^1$$
 $S^{r}Z$ 
 $Y^2$ 
(II)

wherein Y<sup>1</sup> and Y<sup>2</sup> independently represent a hydrogen atom, halogen or lower alkyl; and Z represents substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group); and

 $X^1$  and  $X^2$  independently represent an oxygen atom or a sulfur atom, or a pharmaceutically acceptable salt thereof.

- 10. (Currently Amended) The method according to any one of claims 6 to 8, claim 9, wherein the higher brain dysfunction impairment of higher brain function is selected from the group consisting of agnosia, amnesia and apraxia.
- 11. (Currently Amended) The method according to any one of claims 6 to 8, claim 9, wherein the higher brain dysfunction impairment of higher brain function is a memory impairment.

12. (Currently Amended) The method according to any one of claims 6 to 8, claim 9, wherein the higher brain dysfunction impairment of higher brain function is a learning impairment.

Claims 13-15 (Cancelled).

16. (New) The method according to any one of claims 9 to 12, wherein the xanthine derivative is (E)-8-(3,4-dimethoxystyryl)-1,3-diethyl-7-methylxanthine.